DIN EN ISO 20031:2022-10 (E)

Radiological protection - Monitoring and dosimetry for internal exposures due to wound contamination with radionuclides (ISO 20031:2020)

Contents

Page

European foreword ... **4**

Foreword ... **5**

Introduction ... **6**

1 Scope ... **7**

2 Normative references ... **7**

3 Terms and definitions ... **7**

4 Symbols and abbreviated terms ... **11**
4.1 Symbols ... 11
4.2 Abbreviated terms ... 11

5 Purpose and need for special monitoring programmes for internal exposures due to wound contamination with radionuclides ... **11**

6 General aspects of wound contamination ... **12**
6.1 Introduction ... 12
6.2 Category of wound contaminants ... 12
6.3 Types of wounds and their specific retention of radionuclides ... 13

7 Monitoring programmes to assess contamination via a wound ... **13**
7.1 Introduction ... 13
7.2 Main steps for the monitoring and dosimetry for internal exposures due to wound contamination with radionuclides ... 13
7.3 Collection of information to characterize the contaminated wound ... 14
7.3.1 General ... 14
7.3.2 Information concerning the type of wound ... 15
7.3.3 Information concerning the radioactive contaminant ... 15
7.4 In vivo wound measurements ... 15
7.5 Systemic activity monitoring ... 16

8 Performance criteria for radiobioassay measurements ... **17**

9 Procedure for local and systemic dose assessment ... **17**
9.1 Local (wound site) dose assessment ... 17
9.2 Systemic dose assessment ... 17
9.3 Impact of medical intervention on dose assessment ... 19
9.3.1 Local chelation therapy and/or the excision of contaminated tissue from the wound ... 19
9.3.2 Decorporation therapy ... 19
9.4 Software tools for bioassay data interpretation ... 19
9.5 Uncertainties ... 20
9.5.1 General ... 20
9.5.2 Uncertainties on local dose assessment ... 20
9.5.3 Uncertainties on internal dose assessment ... 20
9.6 Quality assurance ... 20

10 Recording ... **21**
10.1 Recording in vivo measurement results ... 21
10.2 Recording in vitro radiobioassay and treatment waste results ... 21

11 Documentation of the dose assessment **22**

12 Reporting **22**

Annex A (informative) **Schematic representation of NCRP wound model, default parameters for retention equations and default transfer rates for the wound model for the various categories of radionuclides in wounds (adapted from NCRP report 156 (2007)[3])** **23**

Annex B (informative) **Types of wounds and their specific retention of radionuclides** **26**

Annex C (informative) **Example of a summary sheet that should follow the contaminated worker during his initial care** **28**

Annex D (informative) **Overview of typical methods used for in vitro bioassay measurements** **29**

Annex E (informative) **Equivalent dose rate in a contaminated wound ($mSv \cdot h^{-1} \cdot kBq^{-1}$) and equivalent dose rate received by the skin ($mSv \cdot h^{-1} \cdot kBq^{-1} \cdot cm^2$) for selected radionuclides** **30**

Annex F (informative) **Committed effective dose coefficients for intake of selected radionuclides via a contaminated wound for all wound model categories (adapted from Toohey RE et al., 2014[11])** **32**

Annex G (informative) **The IDEAS Guidelines[14] provide guidelines for the estimation of committed doses from incorporation monitoring data in case of wound** **35**

Annex H (informative) **A-deviations** **36**

Bibliography **37**